

***Combining Data Systems to Better Study
Associated Factors in Children's Health***

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Introduction

Sponsored by

Health Resources and Services Administration's Maternal and Child Health Bureau (HRSA MCHB)

Type of Data

National and state-based estimates on the health and well-being of children, their families, and their communities as well as prevalence and impact of children with special health care needs (or CSHCN)

Data Products

Annual estimates published in SAS and STATA

Data Collection

Screenener

One child is selected



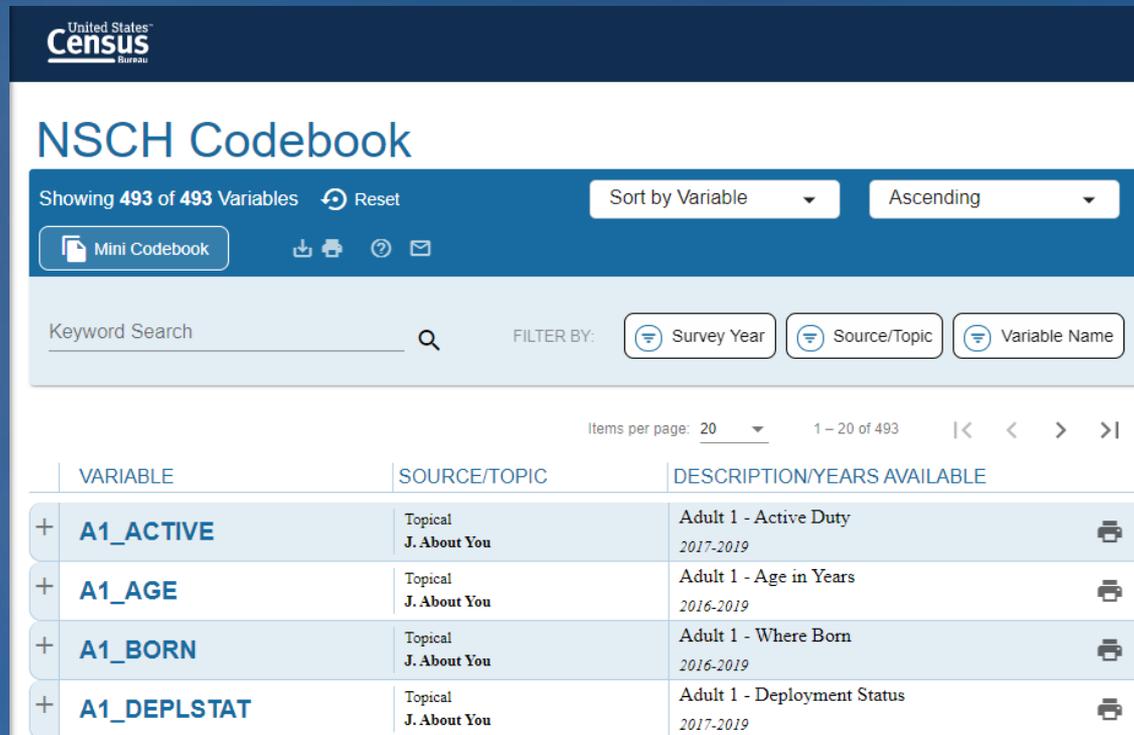
Topical

Survey Topics

- Child and family demographics
- Physical and mental health status
- Health insurance
- Health care services
- Family health and activities
- Parent's perceptions of neighborhood characteristics
- Access to community-based services

NSCH Variables

NSCH Codebook: <https://www.census.gov/data-tools/demo/uccb/nschdict>



The screenshot displays the NSCH Codebook interface from the United States Census Bureau. The page title is "NSCH Codebook". It shows "Showing 493 of 493 Variables" and includes a "Reset" button. The sorting is set to "Sort by Variable" and "Ascending". There are buttons for "Mini Codebook", "Download", "Help", and "Email". A "Keyword Search" field is present, along with "FILTER BY:" options for "Survey Year", "Source/Topic", and "Variable Name". The table below lists variables with columns for "VARIABLE", "SOURCE/TOPIC", and "DESCRIPTION/YEARS AVAILABLE".

	VARIABLE	SOURCE/TOPIC	DESCRIPTION/YEARS AVAILABLE	
+	A1_ACTIVE	Topical J. About You	Adult 1 - Active Duty 2017-2019	
+	A1_AGE	Topical J. About You	Adult 1 - Age in Years 2016-2019	
+	A1_BORN	Topical J. About You	Adult 1 - Where Born 2016-2019	
+	A1_DEPLSTAT	Topical J. About You	Adult 1 - Deployment Status 2017-2019	

NSCH Geography

- Every observation has a state location

Flags

- Core Based Statistical Area Status (CBSA)
- Metropolitan Statistical Area Status (MSA)
- Metropolitan Principal City Status (MPC)

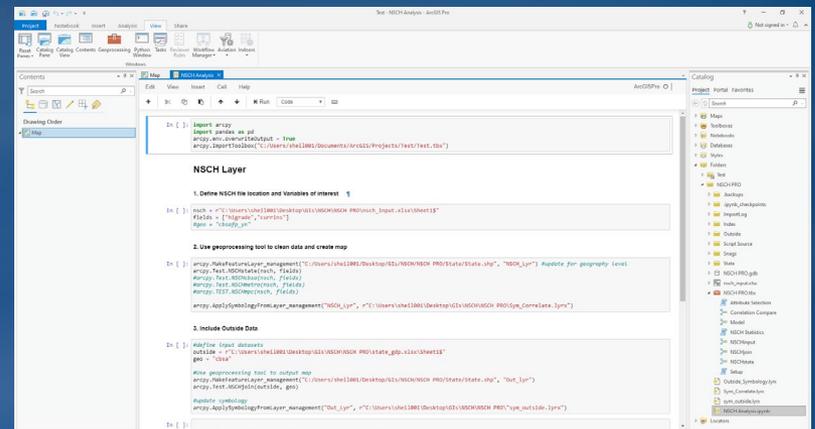
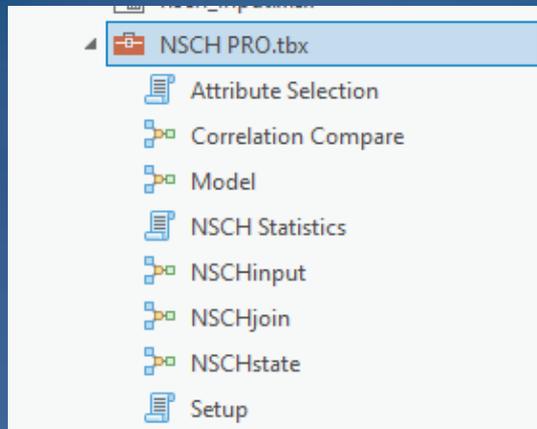
NSCH Data

Household	State
Household1	1
Household2	1
Household3	1
Household4	1



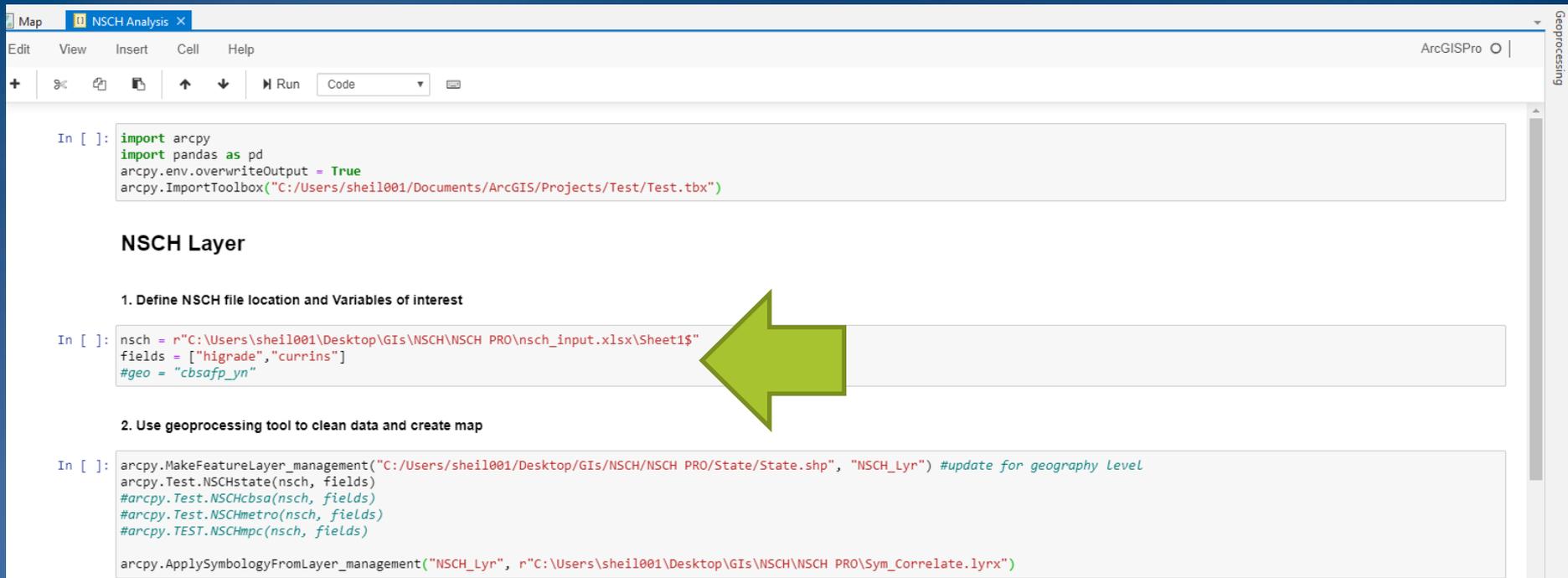
Automation

- Geoprocessing tool to ArcPro notebook



NSCH Input

- Create Shapefiles from NSCH tables



The screenshot shows the ArcGIS Pro Python console interface. The top menu bar includes 'Edit', 'View', 'Insert', 'Cell', and 'Help'. The title bar shows 'Map' and 'NSCH Analysis'. The console contains three code blocks. The first block imports arcpy and pandas, sets environment variables, and imports a toolbox. The second block, titled 'NSCH Layer', defines file paths and fields, and is highlighted with a green arrow. The third block uses arcpy to create a feature layer, test various tools, and apply symbology.

```
In [ ]: import arcpy
import pandas as pd
arcpy.env.overwriteOutput = True
arcpy.ImportToolbox("C:/Users/sheil001/Documents/ArcGIS/Projects/Test/Test.tbx")
```

NSCH Layer

1. Define NSCH file location and Variables of interest

```
In [ ]: nsch = r"C:\Users\sheil001\Desktop\GIS\NSCH\NSCH PRO\nsch_input.xlsx\Sheet1$"
fields = ["higrade", "currins"]
#geo = "cbsafp_yn"
```

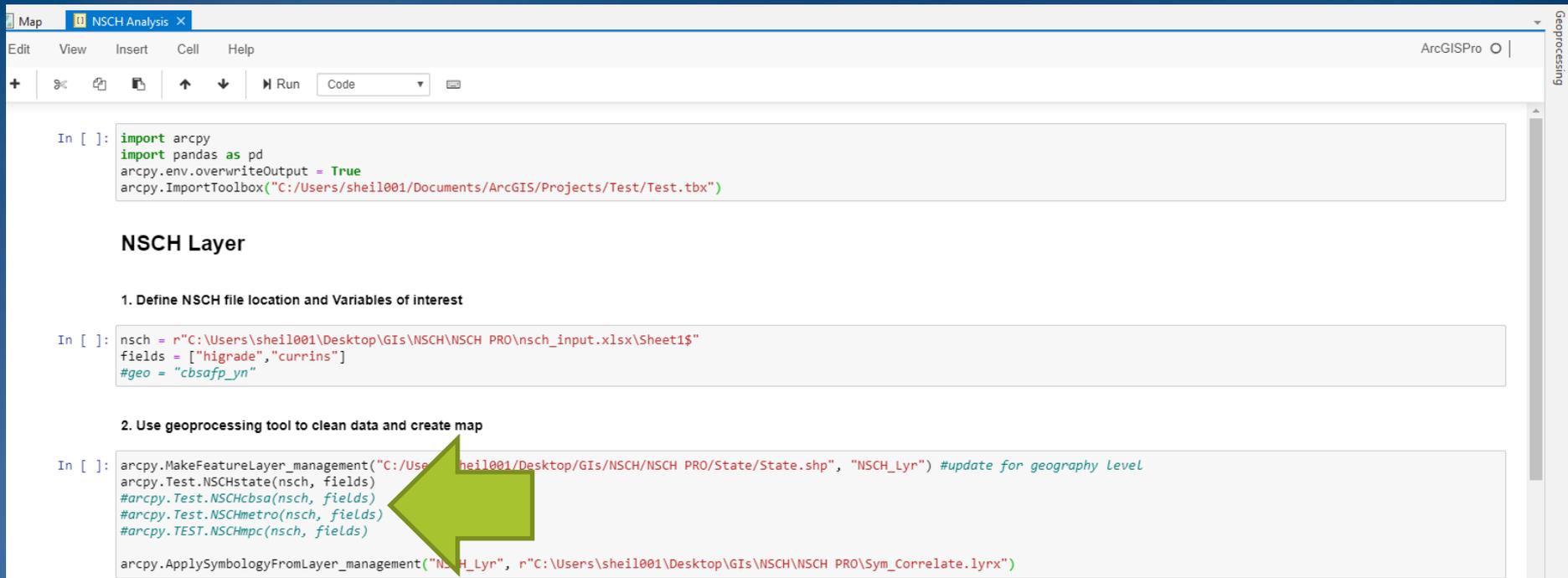
2. Use geoprocessing tool to clean data and create map

```
In [ ]: arcpy.MakeFeatureLayer_management("C:/Users/sheil001/Desktop/GIS/NSCH/NSCH PRO/State/State.shp", "NSCH_Lyr") #update for geography Level
arcpy.Test.NSCHstate(nsch, fields)
#arcpy.Test.NSCHcbsa(nsch, fields)
#arcpy.Test.NSCHmetro(nsch, fields)
#arcpy.TEST.NSCHmpc(nsch, fields)

arcpy.ApplySymbologyFromLayer_management("NSCH_Lyr", r"C:\Users\sheil001\Desktop\GIS\NSCH\NSCH PRO\Sym_Correlate.lyrx")
```

NSCH Input

- Create Shapefiles from NSCH tables



The screenshot shows the ArcGIS Pro Python console interface. The window title is "Map | NSCH Analysis". The menu bar includes "Edit", "View", "Insert", "Cell", and "Help". The toolbar shows "Run" and "Code" buttons. The console contains the following code blocks:

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In [ ]: import arcpy
import pandas as pd
arcpy.env.overwriteOutput = True
arcpy.ImportToolbox("C:/Users/sheil001/Documents/ArcGIS/Projects/Test/Test.tbx")
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NSCH Layer

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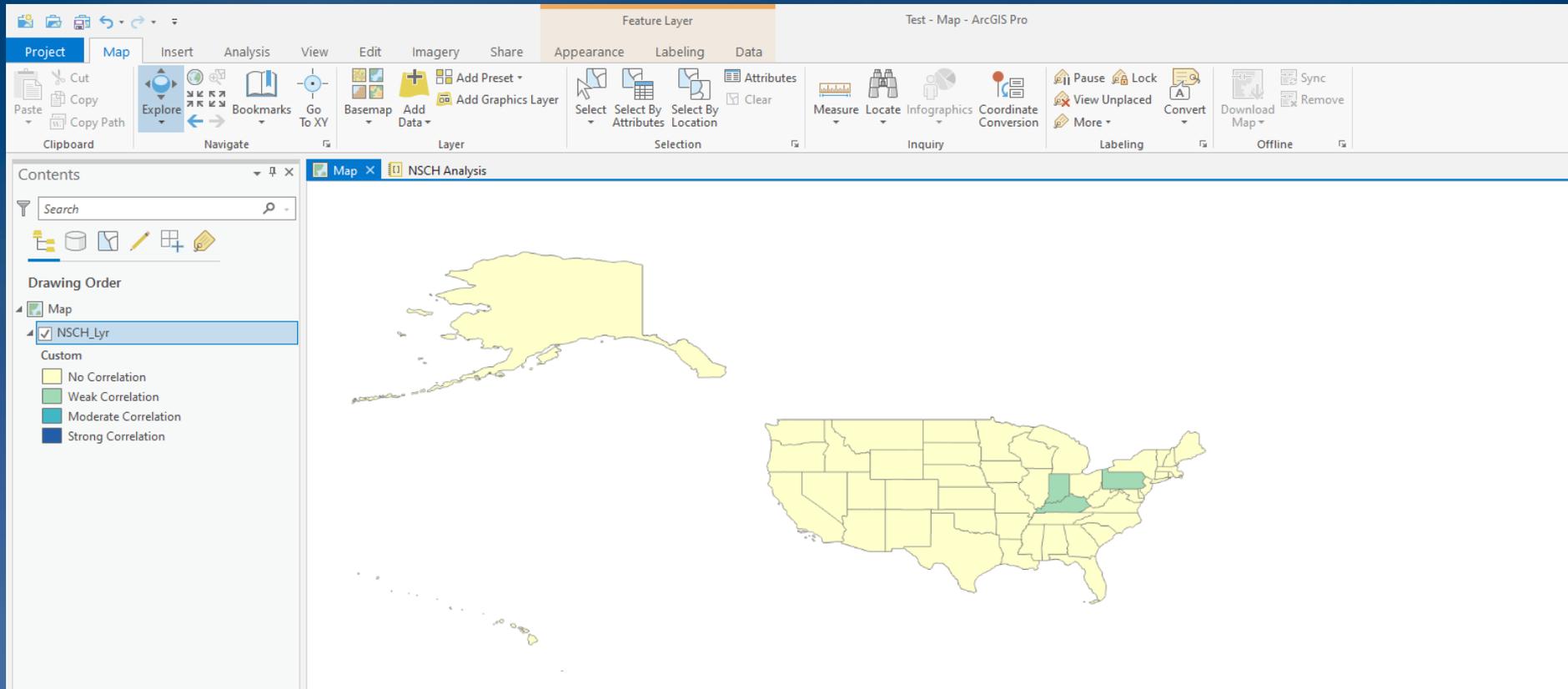
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#arcpy.Test.NSCHcbsa(nsch, fields)
#arcpy.Test.NSCHmetro(nsch, fields)
#arcpy.Test.NSCHmpc(nsch, fields)

arcpy.ApplySymbologyFromLayer_management("NSCH_Lyr", r"C:\Users\sheil001\Desktop\GIS\NSCH\NSCH PRO\Sym_Correlate.lyrx")
```

A large green arrow points to the first line of the second code block: `arcpy.MakeFeatureLayer_management("C:/Users/sheil001/Desktop/GIS/NSCH/NSCH PRO/State/State.shp", "NSCH_Lyr")`.

NSCH Output



Outside Data: Esri

Living Atlas: <https://livingatlas.arcgis.com/en/home/>

The screenshot shows the Esri Living Atlas interface. At the top, there are navigation links for ArcGIS, Pricing, Map, Scene, and Help, along with a search icon and a Sign In button. The main header is "County Health Rankings 2019 - Health Factors", with sub-tabs for Overview, Data, and Visualization. On the left, there is a map thumbnail showing a county-level health ranking visualization. To the right of the map, the text reads: "This feature service contains 2019 County Health Rankings - Health Factors data for nation, state, and county levels." Below this, it says "Feature Layer by esri_demographics" and provides metadata: "Created: Jun 20, 2019 Updated: May 27, 2020 View Count: 9,738". There is a "Living Atlas" badge. On the right side, there are three buttons: "Open in Map Viewer" (highlighted in blue), "Open in Scene Viewer", and "Open in ArcGIS Desktop". Below the buttons, there is a "Description" section with text about the County Health Rankings, a quote from the report, and a "Details" section listing source, creation date, data last updated, size, and attachment size, along with a star rating.

ArcGIS Pricing Map Scene Help Q Sign In

County Health Rankings 2019 - Health Factors

Overview Data Visualization



This feature service contains 2019 County Health Rankings - Health Factors data for nation, state, and county levels.

📍 Feature Layer by [esri_demographics](#)

Created: Jun 20, 2019 Updated: May 27, 2020 View Count: 9,738

[Living Atlas](#)

[Open in Map Viewer](#)

[Open in Scene Viewer](#)

[Open in ArcGIS Desktop](#)

Description

The [County Health Rankings](#), a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute, measure the health of nearly all counties in the nation and rank them within states. The Rankings are compiled using county-level measures from a variety of national and state data sources. These measures are standardized and combined using scientifically-informed weights. This year, secure and affordable housing is the focus of the County Health Rankings Key Findings Report for 2019.

"By ranking the health of nearly every county in the nation, County Health Rankings & Roadmaps (CHR&R) illustrates how where we live affects how well and how long we live. CHR&R also shows what each of us can do to create healthier places to live, learn, work, and play - for everyone."

Details

Source: [Feature Service](#)

Created from: [County Health Rankings 2019, Feature Layer](#)

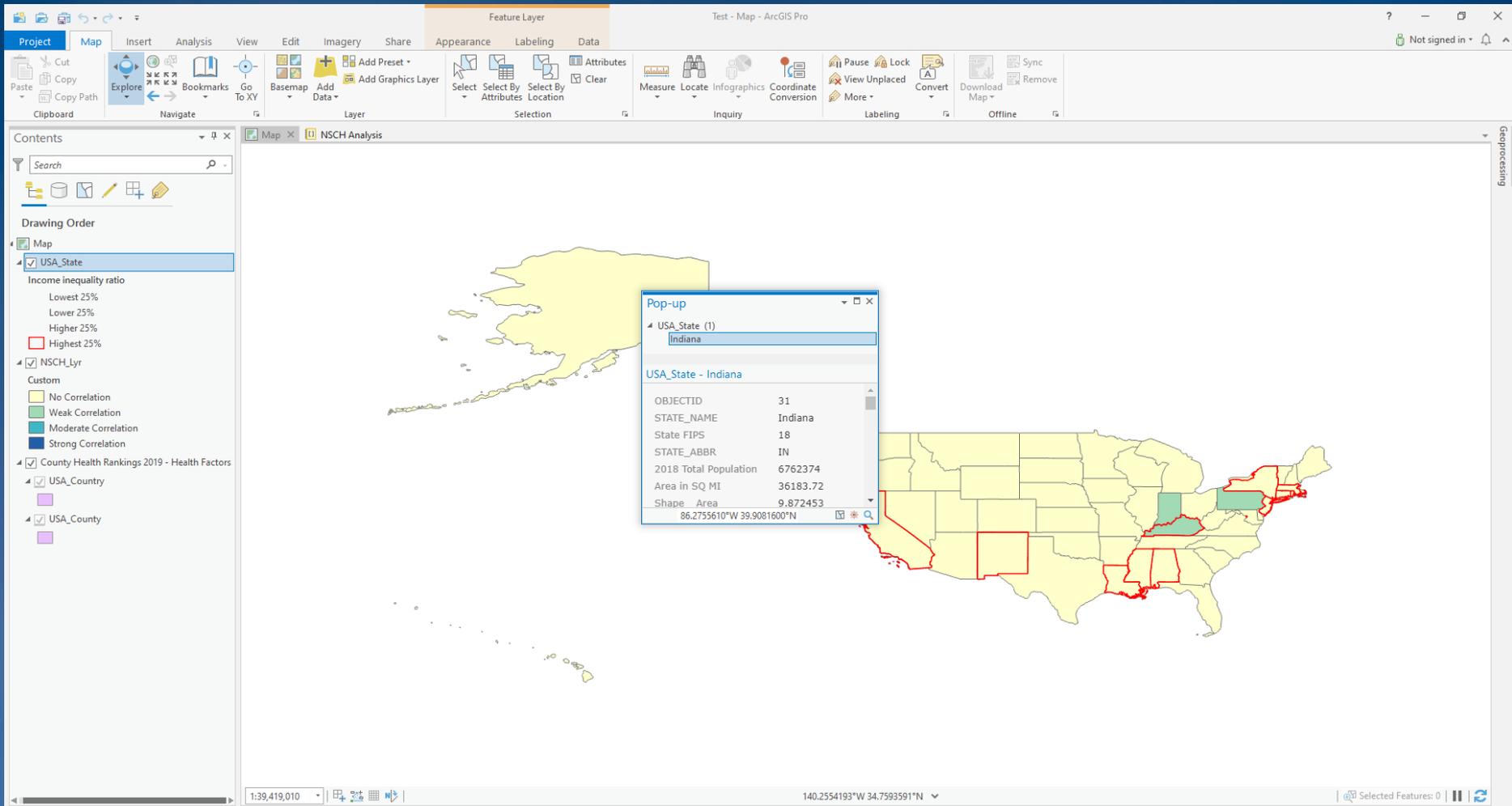
Data Last Updated: Nov 6, 2020, 5:46:31 PM

Size: 1 KB

Attachments Size: 0 KB

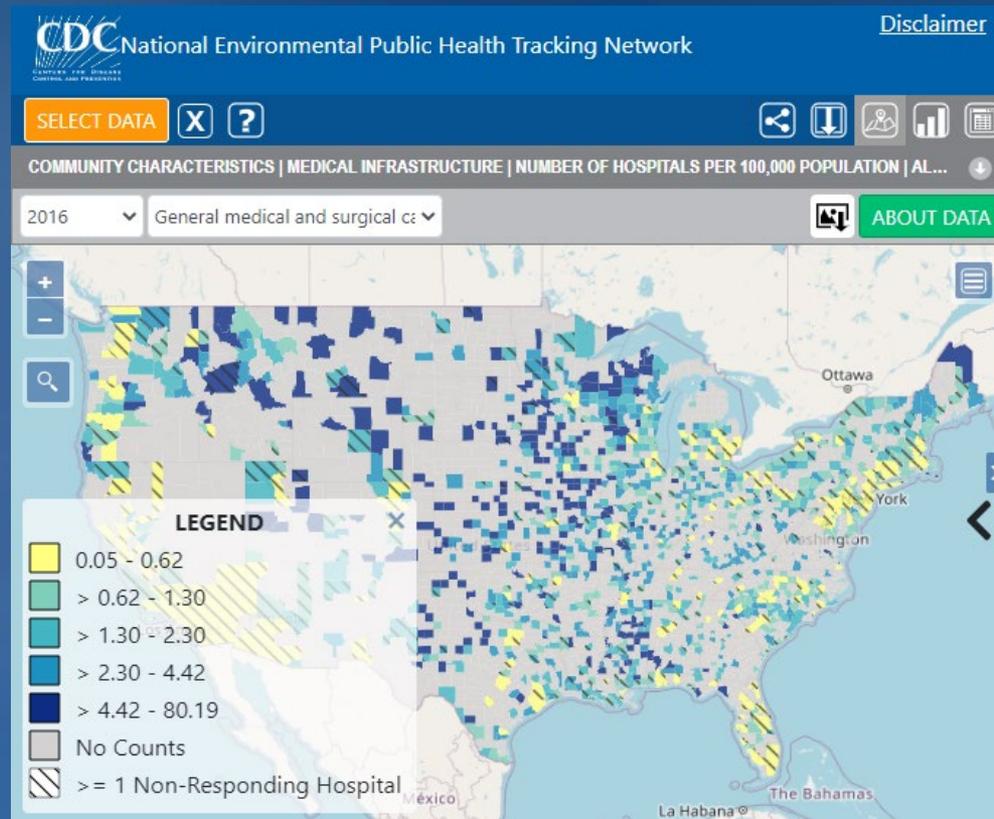
★★★★★

Combined Data



Outside Data: Tables

CDC Data Explorer: <https://ephtracking.cdc.gov/DataExplorer>

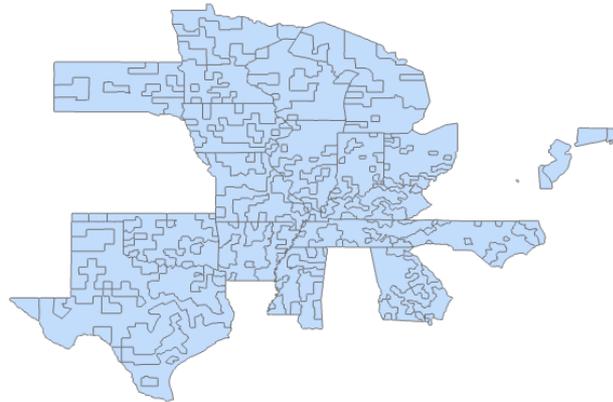


Outside Data Source

```
#define input datasets
outside = r"C:\Users\sheil001\Desktop\GIs\NSCH\NSCH PRO\state_gdp.xlsx\Sheet1$"
geo = "cbsa"

#Use geoprocessing tool to output map
arcpy.MakeFeatureLayer_management("C:/Users/sheil001/Desktop/GIs/NSCH/NSCH PRO/State/State.shp", "Out_lyr")
arcpy.Test.NSCHjoin(outside, geo)

#update symbology
arcpy.ApplySymbologyFromLayer_management("Out_Lyr", r"C:\Users\sheil001\Desktop\GIs\NSCH\NSCH PRO\sym_outside.lyrx")
```



Potential Use

Subgroup Analysis:

- Age Group
- Gender
- Race

Statistical Analysis:

- Component Analysis
- Factor Analysis
- Linear Regression
- Time Series Trend

Summary

